TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371	ATTORNEY'S DOCKET NUMBER **112740-552** U.S APPLICATION NO (IF KNOWN, SEE 37 CFR **10/088769**

INTERNATIONAL APPLICATION NO. **PCT/DE00/03297**	INTERNATIONAL FILING DATE **21 September 2000**	PRIORITY DATE CLAIMED **30 September 1999**

TITLE OF INVENTION
METHOD FOR CONVERSION OF A VOICE OUTPUT OF STATUS MESSAGES

APPLICANT(S) FOR DO/EO/US
Erich Kamperschroer

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND or SUBSEQUENT** submission of items concerning a filing under 35 U.S C. 371
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
   a. ☒ is attached hereto (required only if not communicated by the International Bureau).
   b. ☐ has been communicated by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S C. 371(c)(2)).
   a. ☒ is attached hereto.
   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S C. 371 (c)(3))
   a. ☐ are attached hereto (required only if not communicated by the International Bureau).
   b ☒ have been communicated by the International Bureau.
   c. ☐ have not been made, however, the time limit for making such amendments has NOT expired
   d ☐ have not been made and will not be made.
8. ☒ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S C 371 (c)(5))
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☒ An Information Disclosure Statement under 37 CFR 1 97 and 1.98
14. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3 28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☒ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter 2 and 35 U.S.C. 1.821 - 1.825.
20. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S C 154(d)(4)
22. ☒ Certificate of Mailing by Express Mail
23. ☐ Other items or information:

      PCTUS1/REV03

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 10/088769	INTERNATIONAL APPLICATION NO PCT/DE00/03297	ATTORNEY'S DOCKET NUMBER 112740-552

4. The following fees are submitted:.	CALCULATIONS PTO USE ONLY

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

☐ Neither international preliminary examination fee (37 CFR 1.482) nor international examination fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **$1040.00**

☒ International preliminary examination fee (37 CFR 1 482) not paid to USPTO but International Search Report prepared by the EPO or JPO **$890.00**

☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **$740.00**

☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) **$710.00**

☐ International preliminary examination fee (37 CFR 1 482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) **$100.00**

ENTER APPROPRIATE BASIC FEE AMOUNT =	**$890.00**	

Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1 492 (e))	**$0.00**	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	1 - 20 =	0	x $18 00	**$0.00**	
Independent claims	1 - 3 =	0	x $84.00	**$0.00**	
Multiple Dependent Claims **(check if applicable)**.			☐	**$0.00**	

TOTAL OF ABOVE CALCULATIONS =	**$890.00**	

☐ Applicant claims small entity status. See 37 CFR 1.27). The fees indicated above are reduced by 1/2	**$0.00**	

SUBTOTAL =	**$890.00**	

Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1 492 (f)). +	**$0.00**	

TOTAL NATIONAL FEE =	**$890.00**	

Fee for recording the enclosed assignment (37 CFR 1.21(h)) The assignment must be accompanied by an appropriate cover sheet (37 CFR 3 28, 3.31) **(check if applicable)**. ☐	**$0.00**	

TOTAL FEES ENCLOSED =	**$890.00**	
	Amount to be: refunded	$
	charged	$

a. ☒ A check in the amount of _____ **$890.00** _____ to cover the above fees is enclosed

b. ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees A duplicate copy of this sheet is enclosed.
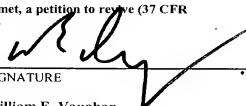
c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. _____ **02-1818** _____ A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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SIGNATURE

William E. Vaughan
NAME

39,056
REGISTRATION NUMBER

March 20, 2002
DATE

BOX PCT

IN THE UNITED STATES ELECTED/DESIGNATED OFFICE

OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5

PRELIMINARY AMENDMENT

APPLICANT:	Erich Kamperschroer	DOCKET NO.:	112740-552
SERIAL NO:		GROUP ART UNIT:	
FILED:		EXAMINER:	

INTERNATIONAL APPLICATION NO::   PCT/DE00/03297

INTERNATIONAL FILING DATE   21 September 2000

INVENTION: METHOD FOR CONVERSION OF A VOICE OUTPUT OF

STATUS MESSAGES

Assistant Commissioner for Patents,
Washington, D.C. 20231

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Sir:

    Please amend the above-identified International Application before entry into

the National stage before the U.S. Patent and Trademark Office under 35 U.S.C. §371

as follows:

15   **In the Specification:**

    Please replace the Specification of the present application, including the

Abstract, with the following Substitute Specification:

SPECIFICATION

TITLE OF THE INVENTION

METHOD FOR CONVERSION OF A

5   VOICE OUTPUT OF STATUS MESSAGES

BACKGROUND OF THE INVENTION

An arrangement for translating protocol data units for incompatible networks to one another is an interface which, in some circumstances, has considerable intelligence and is referred to in the specialist world by the term "gateway". This

10   interface carries out functions for layers 3 or above (up to layer 7) in accordance with OSI reference model (see Course Leaflets, Year 48, 2/1995, pages 102 to 111 and N. Kluβmann: Lexikon der Kommunikations- und Informations-technik [Dictionary of Communications and Information Technology], 1997, Hüthig-Verlag, pages 360 to 362.

15   The term network refers to all resources which connect service access points that are at a distance from one another and provide these services for communication purposes. This relates not only to networks with a very limited extent, such as local area networks, but also to networks with a very large extent; for example, telecommunications networks.

20   Networks whose protocol data units are incompatible include, in particular, telecommunications networks (for example, the public telephone network (PSTN), the integrated service digital network (ISDN), the landline network that is based on the asynchronous digital subscriber line (ADSL), the mobile radio network based on the GSM Standard (first and second mobile radio generation), the mobile radio network

25   based on the UMTS Standard (third mobile radio generation), the mobile network based on the DECT and/or PHS Standard, the global computer network (Internet), the electricity supply network and the broadband cable network) and any type of local area networks (for example, the home automation system, including a network with a radio transmission path, a PLC transmission path, an IRDA transmission path, an InstaBus

30   transmission path, an HES Bus transmission path, a twisted pair transmission path or a coaxial cable transmission path).

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According to the documents ?Funkschau [radio show] 3/1989, pages 45 and 46; Elektronik [electronics] 18/1995, pages 50·to 58; Elektronik [electronics] 17/1996, pages 42 to 47 and pages 48 to 53; Elektronik [electronics] 4/1997, pages 64 to 72; Elektronik [electronics] 1/1998, pages 30 to 33; Elektronik [electronics] 17/1998,
5   pages 74 to 77, pages 78 to 81 and pages 82 to 84? the home automation system describes the technical management of buildings and dwellings. This covers everything that relates to the convenience of the occupant. This includes, for example, load and energy management, water heating, lighting, ventilation and heating systems, control of motor-driven elements (for example, blinds, garage doors, roller shutters,
10   etc.) and safety and protection devices (for example, smoke/fire alarms, intruder warning systems, access monitoring systems, motion indicators, etc.)

Furthermore, the term "technical management" also covers the control of any other electrical appliances, from adjusting a clock to switching on a coffee machine. For installation of home automation systems (building bus systems), the following
15   preconditions must be essentially satisfied for successful market introduction:

      1.   No need for any additional wiring

      2.   Little cost involved

      3.   Uniform communication standard

      4.   Interoperability

20   5.   Plug-and-Play capability

In the recent past, various standards for home bus systems have crystallized out in the field of home automation systems based on different approaches (consumer-item orientated approach, installation-item oriented approach, computer-hardware-oriented approach). However, to a greater or lesser extent, these represent specific solutions for
25   home automation. These standards include:

      1.   For the consumer-item-oriented approach, the Consumer Electronics Bus (CEBus), the ESPRIT Home System (EHS) and the Home Bus System (HBS);

      2.   for the installation-item-oriented approach, the Bati Bus, the European
30   Installation Bus (EIB) and the Smart House; and

3.   for the computer-hardware-oriented approach, the Local Operating Network (LON) and The Real Time Operating System Nucleus (TRON).

The question as to which of the standards that have been mentioned ultimately
5   will be adopted, and will thus become the de-facto standard, depends essentially on the attractiveness of the respective standard for home automation. However, such a system is attractive and really useful only if there are a wide range of products which communicate via this network. Only if the house or dwelling occupier knows when he/she purchases a washing machine, an electric cooker, etc., that the respective
10   appliance will communicate with his/her home bus system, will he/she perhaps be prepared to pay the additional costs for a home automation system, and to install such a system in his/her house. However, if the manufacturer of these appliances does not know which bus system will win the race in the end, then this manufacturer will not, in fact, be prepared to invest in an expensive interface for the respective bus system in
15   order to find, subsequently, that the appliances cannot, in fact, be sold any better as a result of this investment.

In order to improve the attractiveness of the home automation systems described above, an intelligent home interface (residential gateway) is, therefore, required which is both cost-effective and offers the manufacturer of appliances which
20   can be remotely controlled for home automation purposes wide variation options for the implementation of the interfaces for the bus system that is used for home automation.

One approach for providing an "intelligent home interface" (residential gateway) as it is known from a German patent application entitled "Anordnung zum
25   Ineinanderübersetzen von Protokolldateneinheiten inkompatibler Netze" [Arrangement for translation of protocol data units of incompatible networks to one another, official application file reference 19904544.5, is to provide for translation of protocol data units of incompatible networks to one another, a telecommunications network (for example, a public telephone network (PSTN), the integrated service digital network
30   (ISDN), the landline network based on the asynchronous digital subscriber line (ADSL), the mobile radio network based on the GSM Standard (first and second mobile radio generation), the mobile radio network based on the UMTS Standard

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(third mobile radio generation), the mobile network based on the DECT and/or PHS Standard, the global computer network (Internet), the electrical power supply network and the broadband cable network) and a local area network (for example, in the form of a home automation system, including a network with a radio transmission path, a
5   PLC transmission path, an IRDA transmission path, an InstaBus transmission path, an HES Bus transmission path, a twisted pair transmission path or a coaxial cable transmission path) via a telecommunications terminal which is connected to the telecommunications network, has a remote control structure and is allocated to any given x interface for connection to the local network via a specific network adapter.

10   Owing to the increasing convergence of communications and information appliances, the telecommunications terminal in this case has the "intelligent interface" function ("gateway" function) added to it. The information (for example, control commands, status information, alarm messages, etc.) that needs to be transmitted for remote control of appliances in the local area network is transmitted from the interface
15   in a specific record format, with a first record format part which indicates the appliance identification and/or the appliance address, a second record format part which contains the control command for the appliance, and a third record format part which contains the control payload information.

A telecommunications terminal designed in this way makes it possible to drive
20   any appliances connected to that telecommunications terminal.

To do this, an operator has to use a remote control unit; for example, just by transmitting the appliance identification and the control command, to initiate an action in the appliance defined by the appliance identification, to switch the appliance to a different operating mode, or to check the current operating mode.

25   It is known for the output of the operating mode to be transmitted as a data word to the remote control unit, where it is generally produced in the form of an alphanumeric output on a display on the remote control unit.

Furthermore, appliances are known which convert data words, which generally contain numerical values, via a device for speech synthesis into the spoken
30   corresponding form, which is produced as the output. For example, the value "0" is output as a spoken "zero".

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The user of such appliances then, generally, has to use a list or a manual to determine the meaning of this value; that is, in particular, an appliance status associated with this value.

This type of appliance status output is very tedious for an operator and requires that this list or manual always be available in order to control the appliance remotely.

"XPRESS Reference Manual for the HCS II - Release 3.62" October 3, 1998, CREATIVE CONTROL CONCEPTS XP002162174 discloses a "home automation system" appliance, which is equipped as a single-board computer which can be upgraded in modular form. The appliance allows the domestic appliances to be controlled which are connected to the single-board computer via network modules, with voice outputs via a telephone line being possible via a speech module and a telephone interface module, when DTMF tones are entered.

An object to which the present invention is directed is to specify a method for conversion of a voice output of status messages, particularly in home automation systems, which can be implemented cost-effectively and easily and can be used universally for respectively different network types (for example, the types of networks mentioned above).

SUMMARY OF THE INVENTION

In the method according to the present invention, a unique appliance identification is allocated to each appliance which is connected to a telecommunications terminal and is, thus, included in a local area network, via which the telecommunications terminal can address the respective appliance, in particular for remote control, and via which each appliance is identified. Three spoken phrases are allocated to each appliance identification and, thus, to each appliance, and are stored in this association. Statuses which an appliance, contained in the local area network, may assume are taken by the telecommunications terminal from the value of a data word which is transmitted to the telecommunications terminal from that appliance. If the value of this data word corresponds to a first value, then the first spoken phrase associated with the appliance is selected as the output phrase. If the value of the data word corresponds to a second value, then the second spoken phrase allocated to that appliance is selected as the output phrase. If the value of the data word corresponds neither to the first nor the second value, then the value of the data word corresponds at

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least to a third value, and the third spoken phrase allocated to that appliance is selected, in conjunction with the third value, as the output phrase. If the output phrase is selected, it is converted to a form that is legible for a device for speech synthesis, and is transmitted to this device for speech synthesis in order to be output.

5   The method according to the present invention achieves greater user acceptance of a system provided in this way for remote control of appliances, in particular home automation systems, since the use of spoken phrases for outputting appliance statuses makes it easier for the user to understand the data word values, which are rather cryptic without any additional information. Furthermore, this also

10   substantially avoids any need to refer to the appliance statuses that are associated with the values of the data word so that the remote control, in particular the remote checking of the appliance status, can be initiated by the user without any major effort. Furthermore, restricting the spoken phrases associated with an appliance, in particular to three spoken phrases, together with the simplicity of the method, results in the

15   required memory space being minimal. The association of spoken phrases with appliance statuses also can be used universally for any given appliance.

Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the Figures.

20   BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows a flowchart of a method for converting a voice output of appliance statuses according to the teachings of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

At the start 1 of the method, which is carried out in a telecommunications

25   terminal (preferably in the background) so that the normal procedures in telecommunications terminals continue to be carried out without any disturbance, a check is first of all carried out to determine whether a new appliance has been connected to the telecommunications terminal.

If a new appliance has been connected, an appliance number ID is generated

30   for that appliance, and is allocated uniquely to that appliance for appliance identification.

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The appliance number ID is generated such that a sequential number is allocated to the appliances. As such, the respective most-recently-allocated appliance number ID is incremented and allocated to the respective newly connected appliance.

As an alternative to this, it is possible to allocate to the appliance as the appliance identification an appliance number ID which is predetermined by that appliance and, after being connected to the telecommunications terminal, is transmitted to this telecommunications terminal during an initialization process.

A combination of alphabetic and numerical characters is also feasible for generating an appliance identification ID.

Once the appliance number ID has been allocated, the user is requested via a device which is associated with the telecommunications terminal, particularly a microphone, to enter a first spoken phrase SP1, which is allocated to an appliance status identified by a first value VALUE1, to specify a second spoken phrase SP2, which is allocated to a second appliance status identified by a second value VALUE2, and to specify a third spoken phrase SP3, which is allocated to any other appliance status, which is identified by a value VALUE3 which differs from the first and second values VALUE1, VALUE2.

If, for example, a remotely controllable roller shutter is connected to the telecommunications terminal, whose values that are identifying the statuses are defined in an interval [0; 255], with the value "0" corresponding to the "roller shutter entirely raised" status, the value "255" corresponding to the "roller shutter entirely lowered" status, and with the other values identifying a status between these two statuses, then the user can speak the formulation "roller shutter entirely raised" as the first spoken phrase SP1 and can allocate this to the value "0", and then can speak the formulation "roller shutter entirely lowered" as the second spoken phrase SP2 and can allocate this to the value "255". All other values which lie in the interval [1; 254] can be spoken by the user and associated with the formulation "the current position of the roller shutter corresponds to the value:".

Following the user check, the three spoken phrases SP1 to SP3 are stored in conjunction with the appliance number ID in the form of an organized list such that one, and only one, associated spoken phrase SP1, SP2, or SP3 can be determined via a

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current appliance number ID and a current value VALUE1, VALUE2 or VALUE3 identifying an appliance of state.

Alternatively, it is possible to provide for the spoken phrases SP1, SP2 and SP3 to be provided for each appliance such that they are already in digitized form, processed appropriately for storage and for speech synthesis, on a memory medium, such as a floppy disc or a memory chip in the appliance, so that they need not be entered by the user.

After the storage process, the method is started once again with a check as to whether a new appliance has been connected at the startpoint 1.

If the check indicates that no new appliance has been connected, then a check is carried out in a second step 2 to determine whether an appliance status of some particular appliance, which is located in the local area network and is connected to the telecommunications terminal, is being queried by a user.

If this is the case, the appliance is requested to transmit a data word DW, which contains the value VALUE1, VALUE2 or VALUE3 of the current status of the appliance. Once the data word DW has been received, a check is carried out to determine which of the values VALUE1, VALUE2 or VALUE3 is contained in the data word DW.If the data word DW contains the first value VALUE1, then the first spoken phrase SP1, which is associated with the appliance being checked, is set as the output phrase AP on the basis of the current appliance number ID and the current value VALUE1, VALUE2 or VALUE3 of the data word DW.

If the data word DW contains the second value VALUE2, then the second spoken phrase SP2, which is associated with the appliance being checked, is set as the output phrase AP on the basis of the current appliance number ID and the current value VALUE1, VALUE2 or VALUE3 of the data word DW.

For at least one third value VALUE3, which is not the same as the first value VALUE1 or the second value VALUE2, the spoken phrase SP1 which is associated with the appliance being checked is set, followed by the third value VALUE3, as the output phrase AP on the basis of the current appliance number ID and the current value VALUE3 of the data word DW.

Once the spoken phrase has been defined, it is processed such that it can be transmitted and output by a device for speech synthesis.

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If, for example, the user is checking the status of the roller shutters, then the formulation "roller shutter entirely raised" is output to the user if a transmitted data word DW contains the first value VALUE1 "O", the formulation "roller shutter entirely lowered" is output to the user for a transmitted data word DW whose second value is VALUE2 "255", and for every value ([1; 254]) which differs from this, such as a third value VALUE3 "23", the formulation "the current position of the roller shutter corresponds to the value: 23" is output to the user.

After each output, the method is finally continued from the startpoint 1.

If the check finds that the user is not checking any appliance status of any appliance which is located in the local area network and is connected to the telecommunications terminal, then the method is likewise continued at the startpoint 1.

Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the present invention without departing from the hereafter appended claims.

ABSTRACT OF THE DISCLOSURE

A method for conversion of a voice output of appliance statuses, wherein three spoken phrases are stored for each appliance to be controlled, with the first spoken phrase being allocated to a first appliance status, the second spoken phrase being allocated to a second appliance status, and the third spoken phrase being allocated for at least one third status. When an appliance status is checked, the relevant appliance sends a data word. If the value (which identifies the current appliance status) of the data word corresponds to a first value, the first spoken phrase is output, if it corresponds to a second, the second spoken phrase is output, and the third spoken phrase and the third value are output for at least one third value.

In the claims:

On page 12, cancel line 1, and substitute the following left-hand justified heading therefor:

5   **CLAIMS**

Please cancel claim 1, without prejudice, and substitute the following claim therefor:

2.   A method for conversion of a voice output of status messages from at least one appliance which is contained in the local area network and is connected to a
10   telecommunications terminal, the method comprising the steps of:

allocating a unique appliance identification to the at least one appliance;

storing first, second and third spoken phrases, which can be predetermined, for the at least one appliance;

transmitting a status of the at least one appliance to the telecommunications
15   terminal as a data word;

allocating the first, second and third spoken phrases as an output phrase to statuses of the at least one appliance, such that the first spoken phrase is selected as the output phrase for a first status which is identified by a first value of the data word, the second spoken phrase is allocated as the output phrase to a second status which is
20   identified by a second value of the data word, and both the third spoken phrase and a value of the data word, which is being converted for voice output and differs from the first and second values, are allocated as the output phrase to at least one third status, which is identified by a value of the data word which differs from the first and second values, when the data word is transmitted; and

25   forming the output phrase such that it can be transmitted to a device for speech synthesis.
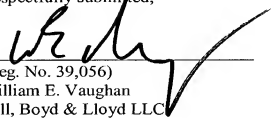
REMARKS

The present amendment makes editorial changes and corrects typographical
30   errors in the specification, which includes the Abstract, in order to conform the specification to the requirements of United States Patent Practice. No new matter is added thereby. Attached hereto is a marked-up version of the changes made to the

specification by the present amendment. The attached page is captioned "**Version With Markings To Show Changes Made**".

In addition, the present amendment cancels original claim 1 in favor of new claim 2. Claim 2 has been presented solely because the revisions by red-lining and underlining which would have been necessary in claim 1 in order to present those claims in accordance with preferred United States Patent Practice would have been too extensive, and thus would have been too burdensome. The present amendment is intended for clarification purposes only and not for substantial reasons related to patentability pursuant to 35 U.S.C. §§101, 102, 103 or 112. Indeed, the cancellation of claim 1 does not constitute an intent on the part of the Applicants to surrender any of the subject matter of claim 1.

Early consideration on the merits is respectfully requested.

Respectfully submitted,

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VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

In The Specification:

The Specification of the present application, including the Abstract, has been amended as follows:

5   ~~Description~~

SPECIFICATION

TITLE OF THE INVENTION

METHOD FOR CONVERSION OF A

VOICE OUTPUT OF STATUS MESSAGES

10   ~~The invention relates to a method for conversion of a voice output of status messages.~~

BACKGROUND OF THE INVENTION

An arrangement for translating protocol data units for incompatible networks to one another is an interface which, in some circumstances, has considerable

15   intelligence and is referred to in the specialist world by the term "gateway". This interface carries out functions for layers 3 or above (up to layer 7) in accordance with OSI reference model (see Course Leaflets, Year 48, 2/1995, pages 102 to 111 and N. Kluβmann: Lexikon der Kommunikations- und Informations-technik [Dictionary of Communications and Information Technology], 1997, Hüthig-Verlag, pages 360 to

20   362.

The term network ~~means~~ refers to all resources which connect service access points that are at a distance from one another and provide these services for communication purposes. This relates not only to networks with a very limited extent, ~~for example~~ such as local area networks, but also to networks with a very large extent~~,~~;

25   for example, telecommunications networks.

Networks whose protocol data units are incompatible include, in particular, telecommunications networks ~~-~~(for example, the public telephone network (PSTN), the integrated service digital network (ISDN), the landline network that is based on the asynchronous digital subscriber line (ADSL), the mobile radio network based on the

30   GSM Standard (first and second mobile radio generation), the mobile radio network based on the UMTS Standard (third mobile radio generation), the mobile network based on the DECT and/or PHS Standard, the global computer network (Internet), the

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electricity supply network and the broadband cable network-) and any type of local area networks -(for example, the home automation system, including comprising a network with a radio transmission path, a PLC transmission path, an IRDA transmission path, an InstaBus transmission path, an HES Bus transmission path, a twisted pair transmission path or a coaxial cable transmission path).

According to the documents ?Funkschau [radio show] 3/1989, pages 45 and 46; Elektronik [electronics] 18/1995, pages 50 to 58; Elektronik [electronics] 17/1996, pages 42 to 47 and pages 48 to 53; Elektronik [electronics] 4/1997, pages 64 to 72; Elektronik [electronics] 1/1998, pages 30 to 33; Elektronik [electronics] 17/1998, pages 74 to 77, pages 78 to 81 and pages 82 to 84? the home automation system describes the technical management of buildings and dwellings. This covers everything that relates to the convenience of the occupant. This includes, for example, load and energy management, water heating, lighting, ventilation and heating systems, control of motor-driven elements (for example, blinds, garage doors, roller shutters, etc.) and safety and protection devices (for example, smoke/fire alarms, intruder warning systems, access monitoring systems, motion indicators, etc.)

Furthermore, the term "technical management" also covers the control of any other electrical appliances, from adjusting a clock to switching on a coffee machine. For installation of home automation systems (building bus systems), the following preconditions must be essentially be satisfied for successful market introduction:

1.   No need for any additional wiring
2.   Little cost involved
3.   Uniform communication standard
4.   Interoperability
5.   Plug-and-Play capability

In the recent past, various standards for home bus systems have crystallized out in the field of home automation systems, based on different approaches (consumer-item orientated approach, installation-item oriented approach, computer-hardware-oriented approach) although. However, to a greater or lesser extent, these represent specific solutions for home automation. These standards include:

15

1.   For the consumer-item-oriented approach, the Consumer Electronics Bus (CEBus), the ESPRIT Home System (EHS) and the Home Bus System (HBS)~~;~~;

2.   for the installation-item-oriented approach, the Bati Bus, the European Installation Bus (EIB) and the Smart House; and

3.   for the computer-hardware-oriented approach, the Local Operating Network (LON) and The Real Time Operating System Nucleus (TRON).

The question as to which of the standards that have been mentioned <u>ultimately</u> will ~~in the end~~ be adopted, and will thus become the de-facto standard, depends essentially on the attractiveness of the respective standard for home automation. However, such a system is attractive and really useful only if there are a wide range of products which communicate via this network. Only if the house or dwelling occupier knows when ~~he or she~~ <u>he/she</u> purchases a washing machine, an electric cooker, etc., that the respective appliance will communicate with ~~his~~ <u>his/her</u> home bus system, will ~~he or she~~ <u>he/she</u> perhaps be prepared to pay the additional costs for a home automation system, and to install such a system in ~~his or her~~ <u>his/her</u> house. However, if the manufacturer of these appliances does not know which bus system will win the race in the end, then this manufacturer will not, in fact, be prepared to invest in an expensive interface for the respective bus system in order ~~subsequently~~ to find<u>, subsequently,</u> that the appliances cannot, in fact, be sold any better as a result of this investment.

In order to improve the attractiveness of the home automation systems described above, an intelligent home interface (residential gateway) is, therefore, required which~~, firstly,~~ is <u>both</u> cost-effective and~~, secondly,~~ offers the manufacturer of appliances which can be remotely controlled for home automation purposes wide variation options for the implementation of the interfaces for the bus system that is used for home automation.

One approach for providing an "intelligent home interface" (residential gateway) as it is known from a German patent application entitled "Anordnung zum Ineinanderübersetzen von Protokolldateneinheiten inkompatibler Netze" [Arrangement for translation of protocol data units of incompatible networks to one another]~~—~~, official application file reference 19904544.5-, is to provide for translation of protocol

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data units of incompatible networks to one another, a telecommunications network –
(for example, a public telephone network (PSTN), the integrated service digital
network (ISDN), the landline network based on the asynchronous digital subscriber
line (ADSL), the mobile radio network based on the GSM Standard (first and second
mobile radio generation), the mobile radio network based on the UMTS Standard
(third mobile radio generation), the mobile network based on the DECT and/or PHS
Standard, the global computer network (Internet), the electrical power supply network
and the broadband cable network-) and a local area network -(for example, in the form
of a home automation system, ~~comprising~~ including a network with a radio
transmission path, a PLC transmission path, an IRDA transmission path, an InstaBus
transmission path, an HES Bus transmission path, a twisted pair transmission path or a
coaxial cable transmission path ~~by means of)~~ via a telecommunications terminal
which is connected to the telecommunications network, has a remote control structure
and is allocated to any given x interface for connection to the local network via a
specific network adapter.

Owing to the increasing convergence of communications and information
appliances, the telecommunications terminal in this case has the "intelligent interface"
function ("gateway" function) added to it. The information (for example, control
commands, status information, alarm messages, etc.) that needs to be transmitted for
remote control of appliances in the local area network is transmitted from the interface
in a specific record format, with a first record format part which indicates the
appliance identification and/or the appliance address, a second record format part
which contains the control command for the appliance, and a third record format part
which contains the control payload information.

A telecommunications terminal designed in this way makes it possible to drive
any appliances connected to that telecommunications terminal.

To do this, an operator has to use a remote control unit-; for example, just by
transmitting the appliance identification and the control command, to initiate an action
in the appliance defined by the appliance identification, to switch the appliance to a
different operating mode, or to check the current operating mode.

It is known for the output of the operating mode to be transmitted as a data word to the remote control unit; where it is generally produced in the form of an alphanumeric output on a display on the remote control unit.

Furthermore, appliances are known which convert data words, which generally
5 contain numerical values, ~~by means of~~ via a device for speech synthesis into the spoken corresponding form, which is produced as the output. For example, the value "0" is output as a spoken "zero".

The user of such appliances then, generally, has to use a list or a manual to determine the meaning of this ~~value,;~~ that is ~~to say,~~ in particular, an appliance status
10 associated with this value.

This type of appliance status output is very tedious for an operator and requires that this list or manual always be ~~available,~~ in order to control the appliance remotely.

"XPRESS Reference Manual for the HCS II - Release 3.62" October 3, 1998, CREATIVE CONTROL CONCEPTS XP002162174 discloses a "home automation
15 system" appliance, which is equipped as a single-board computer which can be upgraded in modular form. The appliance allows the domestic appliances to be controlled which are connected to the single-board computer via network modules, with voice outputs via a telephone line being possible ~~by means of~~ via a speech module and a telephone interface module, when DTMF tones are entered.

20 ~~The~~ An object ~~on~~ to which the present invention is ~~based~~ directed is to specify a method for conversion of a voice output of status messages, ~~in particular~~ particularly in home automation systems, which can be implemented cost-effectively and easily and can be used universally for respectively different network types (for example, the types of networks mentioned above).

25 ~~This object is achieved by the features of patent claim 1.~~

SUMMARY OF THE INVENTION

In the method according to the present invention ~~as claimed in claim 1~~, a unique appliance identification is allocated to each appliance which is connected to a telecommunications terminal and is, thus, included in a local area network, ~~by means~~
30 ~~of~~ via which the telecommunications terminal can address the respective appliance, in particular for remote control, and ~~by means of~~ via which each appliance is identified. Three spoken phrases are allocated to each appliance ~~identification,~~ and, thus, to each

appliance, and are stored in this association. Statuses which an appliance, contained in the local area network, may assume are taken by the telecommunications terminal from the value of a data word which is transmitted to the telecommunications terminal from that appliance. If the value of this data word corresponds to a first value, then the

5   first spoken phrase associated with the appliance is selected as the output phrase. If the value of the data word corresponds to a second value, then the second spoken phrase allocated to that appliance is selected as the output phrase. If the value of the data word corresponds neither to the first nor the second value, then the value of the data word corresponds at least to a third value, and the third spoken phrase allocated to

10   that appliance is selected, in conjunction with the third value, as the output phrase. If the output phrase is selected, it is converted to a form that is legible for a device for speech synthesis, and is transmitted to this device for speech synthesis in order to be output.

The method according to the <u>present</u> invention achieves greater user

15   acceptance of a system provided in this way for remote control of appliances, in particular home automation systems, since the use of spoken phrases for outputting appliance statuses makes it easier for the user to understand the data word values, which are rather cryptic without any additional information. Furthermore, this also ~~mostly~~ <u>substantially</u> avoids any need to refer to the appliance statuses that are

20   associated with the values of the data word, so that the remote control, in particular the remote checking of the appliance status, can be initiated by the user without any major effort. Furthermore, restricting the spoken phrases associated with an appliance, in particular to three spoken phrases, together with the simplicity of the method, ~~mean~~ ~~that~~ <u>results in</u> the required memory space ~~is~~ <u>being</u> minimal. The association of spoken

25   phrases with appliance statuses ~~can~~ also <u>can</u> be used universally for any given appliance.

<u>Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the Figures.</u>

30   ~~An exemplary embodiment of the invention will be explained with reference to the single figure, which shows a flowchart of a method for converting a voice output of appliance statuses.~~

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows a flowchart of a method for converting a voice output of appliance statuses according to the teachings of the present invention.

DETAILED DESCRIPTION OF THE INVENTION.

5 ~~The figure uses a flowchart to describe the method for converting a voice output of appliance statuses.~~

At the start 1 of the method, which is carried out in a telecommunications terminal —especially(preferably in the background-) so that the normal procedures in telecommunications terminals continue to be carried out without any disturbance, a

10 check is first of all carried out to determine whether a new appliance has been connected to the telecommunications terminal.

If a new appliance has been connected, an appliance number ID is generated for that appliance, and is allocated uniquely to that appliance for appliance identification.

15 The appliance number ID is generated such that a sequential number is allocated to the appliances. ~~This means that~~ As such, the respective most-recently- allocated appliance number ID is incremented, and ~~is~~ allocated to the respective newly connected appliance.

As an alternative to this, it is possible to allocate to the appliance as the

20 appliance identification an appliance number ID which is predetermined by that appliance and, after being connected to the telecommunications terminal, is transmitted to this telecommunications terminal during an initialization process.

A combination of alphabetic and numerical characters is also feasible for generating an appliance identification ID.

25 Once the appliance number ID has been allocated, the user is requested via a device which is associated with the telecommunications terminal, ~~in particular~~ particularly a microphone, to enter a first spoken phrase SP1, which is allocated to an appliance status identified by a first value VALUE1, to specify a second spoken phrase SP2, which is allocated to a second appliance status identified by a second

30 value VALUE2, and to specify a third spoken phrase SP3, which is allocated to any other appliance status, which is identified by a value VALUE3 which differs from the first and second values VALUE1, VALUE2.

If, for example, a remotely controllable roller shutter is connected to the telecommunications terminal, whose values that are identifying the statuses are defined in an interval [0; 255], with the value "0" corresponding to the "roller shutter entirely raised" status, ~~and~~ the value "255" corresponding to the "roller shutter entirely

5   lowered" status, and with the other values identifying a status between these two statuses, then the user can speak the formulation "roller shutter entirely raised" as the first spoken phrase SP1~~,~~ and <u>can</u> allocate this to the value "0", and ~~the user~~ <u>then</u> can speak the formulation "roller shutter entirely lowered" as the second spoken phrase SP2 and can allocate this to the value "255". All other values which lie in the interval

10   [1; 254] can be spoken by the user and associated with the formulation "the current position of the roller shutter corresponds to the value:".

Following the user check, the three spoken phrases SP1 to SP3 are stored in conjunction with the appliance number ID in the form of an organized list such that one, and only one, associated spoken phrase SP1, SP2, or SP3 can be determined ~~by~~

15   ~~means of~~ <u>via</u> a current appliance number ID and a current value VALUE1, VALUE2 or VALUE3 identifying an appliance of state.

Alternatively, it is possible to provide for the spoken phrases SP1, SP2 and SP3 to be provided for each appliance such that they are already in digitized form, processed appropriately for storage and for speech synthesis, on a memory medium,

20   ~~for example~~ <u>such as</u> a floppy disc or a memory chip in the appliance, so that they need not be entered by the user.

After the storage process, the method is started once again with a check as to whether a new appliance has been connected~~,~~ at the startpoint 1.

If the check indicates that no new appliance has been connected, then a check

25   is carried out in a second step 2 to determine whether an appliance status of some particular appliance, which is located in the local area network and is connected to the telecommunications terminal, is being queried by a user.

If this is the case, the appliance is requested to transmit a data word DW, which contains the value VALUE1, VALUE2 or VALUE3 of the current status of the

30   appliance. Once the data word DW has been received, a check is carried out to determine which of the values VALUE1, VALUE2 or VALUE3 is contained in the data word DW. If the data word DW contains the first value VALUE1, then the first

spoken phrase SP1, which is associated with the appliance being checked, is set as the output phrase AP on the basis of the current appliance number ID and the current value VALUE1, VALUE2 or VALUE3 of the data word DW.

If the data word DW contains the second value VALUE2, then the second spoken phrase SP2, which is associated with the appliance being checked, is set as the output phrase AP on the basis of the current appliance number ID and the current value VALUE1, VALUE2 or VALUE3 of the data word DW.

For at least one third value VALUE3, which is not the same as the first value VALUE1 or the second value VALUE2, the spoken phrase SP1 which is associated with the appliance being checked is set, followed by the third value VALUE3, as the output phrase AP, on the basis of the current appliance number ID and the current value VALUE3 of the data word DW.

Once the spoken phrase has been defined, ~~this~~ <u>it</u> is processed such that it can be transmitted and output by a device for speech synthesis.

If, for example, the user is checking the status of the roller shutters, then the formulation "roller shutter entirely raised" is output to the user if a transmitted data word DW contains the first value VALUE1 "O", the formulation "roller shutter entirely lowered" is output to the user for a transmitted data word DW whose second value is VALUE2 "255", and for every value ([1; 254]) which differs from this, ~~for example~~ <u>such as</u> a third value VALUE3 "23", the formulation "the current position of the roller shutter corresponds to the value: 23" is output to the user.

After each output, the method is finally continued from the startpoint 1.

If the check finds that the user is not checking any appliance status of any appliance which is located in the local area network and is connected to the telecommunications terminal, then the method is likewise continued at the startpoint 1.

~~The exemplary embodiments which have been mentioned represent only some of the embodiments which are possible by virtue of the invention. For example, anyone skilled in the art in this field will be able to create a large number of further embodiments by means of advantageous modifications, without the character (essence) of the invention being changed in the process. These embodiments are likewise intended to be covered by the invention.~~

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Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the present invention without departing from the hereafter appended claims.

~~Patent Claims~~ ABSTRACT OF THE DISCLOSURE

~~Abstract~~

~~Method for conversion of a voice appliance output of statuses~~

~~For~~ <u>A method for conversion of</u> a voice output of appliance statuses, <u>wherein</u>
5   three spoken phrases are stored for each appliance to be controlled, with the first
spoken phrase being allocated to a first appliance status, the second spoken phrase
being allocated to a second appliance status, and the third spoken phrase being
allocated for at least one third status.   When an appliance status is checked, the
relevant appliance sends a data word.   If the value (which identifies the current
10   appliance status) of the data word corresponds to a first value, the first spoken phrase
is output, if it corresponds to a second, the second spoken phrase is output, and the
third spoken phrase and the third value are output for at least one third value.

~~FIGURE~~

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Description

Method for conversion of a voice output of status messages

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The invention relates to a method for conversion of a voice output of status messages.

An arrangement for translating protocol data units for
10 incompatible networks to one another is an interface which in some circumstances has considerable intelligence and is referred to in the specialist world by the term "gateway". This interface carries out functions for layers 3 or above (up to layer 7) in
15 accordance with OSI reference model (see Course Leaflets, Year 48, 2/1995, pages 102 to 111 and N. Kluβmann: Lexikon der Kommunikations- und Informations- technik [Dictionary of Communications and Information Technology], 1997, Hüthig-Verlag, pages 360 to 362.
20

The term network means all resources which connect service access points that are at a distance from one another and provide these services for communication purposes. This relates not only to networks with a very
25 limited extent, for example local area networks, but also to networks with a very large extent, for example telecommunications networks.

Networks whose protocol data units are incompatible
30 include, in particular, telecommunications networks - for example the public telephone network (PSTN), the integrated service digital network (ISDN), the landline network that is based on the asynchronous digital subscriber line (ADSL), the mobile radio network based
35 on the GSM Standard (first and second mobile radio generation), the mobile radio network based on the UMTS Standard (third mobile radio generation), the mobile network based on the DECT and/or PHS Standard, the

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global computer network (Internet), the electricity
supply network and the broadband cable network - and
any type of local area networks - for example the home
automation system,

comprising a network with a radio transmission path, a
PLC transmission path, an IRDA transmission path, an
InstaBus transmission path, an HES Bus transmission
path, a twisted pair transmission path or a coaxial
5   cable transmission path.

According to the documents *?Funkschau [radio show]
3/1989, pages 45 and 46; Elektronik [electronics]
18/1995, pages 50 to 58; Elektronik [electronics]*
10 *17/1996, pages 42 to 47 and pages 48 to 53; Elektronik
[electronics] 4/1997, pages 64 to 72; Elektronik
[electronics] 1/1998, pages 30 to 33; Elektronik
[electronics] 17/1998, pages 74 to 77, pages 78 to 81
and pages 82 to 84?* the home automation system
15 describes the technical management of buildings and
dwellings. This covers everything that relates to the
convenience of the occupant. This includes, for
example, load and energy management, water heating,
lighting, ventilation and heating systems, control of
20 motor-driven elements (for example blinds, garage
doors, roller shutters etc.) and safety and protection
devices (for example smoke/fire alarms, intruder
warning systems, access monitoring systems, motion
indicators, etc.)
25

Furthermore, the term "technical management" also
covers the control of any other electrical appliances,
from adjusting a clock to switching on a coffee
machine. For installation of home automation systems
30 (building bus systems), the following preconditions
must essentially be satisfied for successful market
introduction:

    1.   No need for any additional wiring
35 2.   Little cost involved
    3.   Uniform communication standard
    4.   Interoperability
    5.   Plug-and-Play capability

2a

In the recent past, various standards for home bus
systems have crystallized out in the field of home
automation systems, based on different approaches
(consumer-item orientated approach, installation-item
5   oriented approach,

computer-hardware-oriented approach) although, to a greater or lesser extent, these represent specific solutions for home automation. These standards include:

5 1. For the consumer-item-oriented approach, the Consumer Electronics Bus (CEBus), the ESPRIT Home System (EHS) and the Home Bus System (HBS),

2. for the installation-item-oriented approach, the Bati Bus, the European Installation Bus (EIB) and
10 the Smart House and

3. for the computer-hardware-oriented approach, the Local Operating Network (LON) and The Real Time Operating System Nucleus (TRON).

15 The question as to which of the standards that have been mentioned will in the end be adopted, and will thus become the de-facto standard, depends essentially on the attractiveness of the respective standard for home automation. However, such a system is attractive
20 and really useful only if there are a wide range of products which communicate via this network. Only if the house or dwelling occupier knows when he or she purchases a washing machine, an electric cooker etc. that the respective appliance will communicate with his
25 home bus system, will he or she perhaps be prepared to pay the additional costs for a home automation system, and to install such a system in his or her house. However, if the manufacturer of these appliances does not know which bus system will win the race in the end,
30 then this manufacturer will not in fact be prepared to invest in an expensive interface for the respective bus system in order subsequently to find that the appliances cannot in fact be sold any better as a result of this investment.

35 In order to improve the attractiveness of the home automation systems described above, an intelligent home interface (residential gateway) is therefore required

which, firstly, is cost-effective and, secondly, offers the manufacturer of appliances which can be remotely controlled for

home automation purposes wide variation options for the implementation of the interfaces for the bus system that is used for home automation.

5   One approach for providing an "intelligent home interface" (residential gateway) as it is known from a German patent application entitled "Anordnung zum Ineinanderübersetzen von Protokolldateneinheiten inkompatibler Netze" [Arrangement for translation of

10   protocol data units of incompatible networks to one another] - official application file reference 19904544.5 - is to provide for translation of protocol data units of incompatible networks to one another, a telecommunications network - for example a public

15   telephone network (PSTN), the integrated service digital network (ISDN), the landline network based on the asynchronous digital subscriber line (ADSL), the mobile radio network based on the GSM Standard (first and second mobile radio generation), the mobile radio

20   network based on the UMTS Standard (third mobile radio generation), the mobile network based on the DECT and/or PHS Standard, the global computer network (Internet), the electrical power supply network and the broadband cable network - and a local area network -

25   for example in the form of a home automation system, comprising a network with a radio transmission path, a PLC transmission path, an IRDA transmission path, an InstaBus transmission path, an HES Bus transmission path, a twisted pair transmission path or a coaxial

30   cable transmission path - by means of a telecommunications terminal which is connected to the telecommunications network, has a remote control structure and is allocated to any given x interface for connection to the local network via a specific network

35   adapter.

Owing to the increasing convergence of communications and information appliances, the telecommunications terminal in this case has the "intelligent interface" function ("gateway" function) added to it. The information (for example control commands, status information, alarm messages, etc.) that needs to be transmitted for remote control of appliances in the local area network is transmitted from the interface in a specific record format, with a first record format part which indicates the appliance identification and/or

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the appliance address, a second record format part
which contains the control command for the appliance,
and a third record format part which contains the
control payload information.

5

A telecommunications terminal designed in this way
makes it possible to drive any appliances connected to
that telecommunications terminal.

10   To do this, an operator has to use a remote control
unit, for example just by transmitting the appliance
identification and the control command, to initiate an
action in the appliance defined by the appliance
identification, to switch the appliance to a different
15   operating mode, or to check the current operating mode.

It is known for the output of the operating mode to be
transmitted as a data word to the remote control unit,
where it· is generally produced in the form of an
20   alphanumeric output on a display on the remote control
unit.

Furthermore, appliances are known which convert data
words, which generally contain numerical values, by
25   means of a device for speech synthesis into the spoken
corresponding form, which is produced as the output.
For example, the value "0" is output as a spoken
"zero".

30   The user of such appliances then generally has to use a
list or a manual to determine the meaning of this
value, that is to say, in particular, an appliance
status associated with this value.

35   This type of appliance status output is very tedious
for an operator and requires that this list or manual
always be available, in order to control the appliance
remotely.

"XPRESS Reference Manual for the HCS II - Release 3.62"
October 3, 1998, CREATIVE CONTROL CONCEPTS XP002162174
discloses a "home automation system" appliance, which
5   is equipped as a single-board computer which can be
upgraded in modular form. The appliance allows the
domestic appliances to be controlled which are
connected to the single-board computer via network
modules, with voice outputs via a telephone line being
10   possible by means of a speech module and a telephone
interface module, when DTMF tones are entered.

The object on which the invention is based is to
specify a method for conversion of a voice output of
15   status messages, in particular in home automation
systems, which can be implemented cost-effectively and
easily and can be used universally for respectively
different network types (for example the types of
networks mentioned above).

20

This object is achieved by the features of patent claim
1.

In the method according to the invention - as claimed
25   in claim 1 - a unique appliance identification is
allocated to each appliance which is connected to a
telecommunications terminal and is thus included in a
local area network, by means of which the
telecommunications terminal can address the respective
30   appliance, in particular for remote control, and by
means of which each appliance is identified. Three
spoken phrases are allocated to each appliance
identification, and thus to each appliance, and are
stored in this association. Statuses which an
35   appliance, contained in the local area network, may
assume are taken by the telecommunications terminal
from the value of a data word which is transmitted to

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the telecommunications terminal from that appliance. If
the value of this data word corresponds to a first
value, then the first spoken phrase associated with the
appliance is selected as the output phrase. If the
value of the data word corresponds to a second value,
then the second spoken phrase allocated to that
appliance is selected as the output phrase. If the
value of the data word corresponds neither to the first
nor the second value, then the value of the data word
corresponds at least to a third value, and the third
spoken phrase allocated to that appliance is selected,
in conjunction with the third value, as the output
phrase. If the output phrase is selected, it is
converted to a form that is legible for a device for
speech synthesis, and is transmitted to this device for
speech synthesis in order to be output.

The method according to the invention achieves greater
user acceptance of a system provided in this way for
remote control of appliances, in particular home
automation systems, since the use of spoken phrases for
5   outputting appliance statuses makes it easier for the
user to understand the data word values, which are
rather cryptic without any additional information.
Furthermore, this also mostly avoids any need to refer
to the appliance statuses that are associated with the
10   values of the data word, so that the remote control, in
particular the remote checking of the appliance status,
can be initiated by the user without any major effort.
Furthermore, restricting the spoken phrases associated
with an appliance, in particular to three spoken
15   phrases, together with the simplicity of the method,
mean that the required memory space is minimal. The
association of spoken phrases with appliance statuses
can also be used universally for any given appliance.

20   An exemplary embodiment of the invention will be
explained with reference to the single figure, which
shows a flowchart of a method for converting a voice
output of appliance statuses.

25   The figure uses a flowchart to describe the method for
converting a voice output of appliance statuses.

At the start 1 of the method, which is carried out in a
telecommunications terminal - especially in the
30   background - so that the normal procedures in
telecommunications terminals continue to be carried out
without any disturbance, a check is first of all
carried out to determine whether a new appliance has
been connected to the telecommunications terminal.
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If a new appliance has been connected, an appliance
number ID is generated for that appliance, and is

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allocated uniquely to that appliance for appliance identification.

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The appliance number ID is generated such that a sequential number is allocated to the appliances. This means that the respective most recently allocated appliance number ID is incremented, and is allocated to
5   the respective newly connected appliance.

As an alternative to this, it is possible to allocate to the appliance as the appliance identification an appliance number ID which is predetermined by that
10   appliance and, after being connected to the telecommunications terminal, is transmitted to this telecommunications terminal during an initialization process.

15   A combination of alphabetic and numerical characters is also feasible for generating an appliance identification ID.

Once the appliance number ID has been allocated, the
20   user is requested via a device which is associated with the telecommunications terminal, in particular a microphone, to enter a first spoken phrase SP1, which is allocated to an appliance status identified by a first value VALUE1, to specify a second spoken phrase
25   SP2, which is allocated to a second appliance status identified by a second value VALUE2, and to specify a third spoken phrase SP3, which is allocated to any other appliance status, which is identified by a value VALUE3 which differs from the first and second values
30   VALUE1, VALUE2.

If, for example, a remotely controllable roller shutter is connected to the telecommunications terminal, whose values that are identifying the statuses are defined in
35   an interval [0; 255], with the value "0" corresponding to the "roller shutter entirely raised" status, and the value "255" corresponding to the "roller shutter entirely lowered" status, and with the other values

identifying a status between these two statuses, then the user can speak the formulation "roller shutter entirely raised" as the first spoken phrase SP1, and allocate this to the value "0", and

the user can speak the formulation "roller shutter entirely lowered" as the second spoken phrase SP2 and can allocate this to the value "255". All other values which lie in the interval [1; 254] can be spoken by the

5 user and associated with the formulation "the current position of the roller shutter corresponds to the value:".

Following the user check, the three spoken phrases SP1

10 to SP3 are stored in conjunction with the appliance number ID in the form of an organized list such that one, and only one, associated spoken phrase SP1, SP2, or SP3 can be determined by means of a current appliance number ID and a current value VALUE1, VALUE2

15 or VALUE3 identifying an appliance of state.

Alternatively, it is possible to provide for the spoken phrases SP1, SP2 and SP3 to be provided for each appliance such that they are already in digitized form,

20 processed appropriately for storage and for speech synthesis, on a memory medium, for example a floppy disc or a memory chip in the appliance, so that they need not be entered by the user.

25 After the storage process, the method is started once again with a check as to whether a new appliance has been connected, at the startpoint 1.

If the check indicates that no new appliance has been

30 connected, then a check is carried out in a second step 2 to determine whether an appliance status of some particular appliance, which is located in the local area network and is connected to the telecommunications terminal, is being queried by a user.

35

If this is the case, the appliance is requested to transmit a data word DW, which contains the value VALUE1, VALUE2 or VALUE3 of the current status of the

appliance. Once the data word DW has been received, a check is carried out to determine which of the values VALUE1, VALUE2 or VALUE3 is contained in the data word DW.

If the data word DW contains the first value VALUE1,
then the first spoken phrase SP1, which is associated
with the appliance being checked, is set as the output
phrase AP on the basis of the current appliance number
5   ID and the current value VALUE1, VALUE2 or VALUE3 of
the data word DW.

If the data word DW contains the second value VALUE2,
then the second spoken phrase SP2, which is associated
10   with the appliance being checked, is set as the output
phrase AP on the basis of the current appliance number
ID and the current value VALUE1, VALUE2 or VALUE3 of
the data word DW.

15   For at least one third value VALUE3, which is not the
same as the first value VALUE1 or the second value
VALUE2, the spoken phrase SP1 which is associated with
the appliance being checked is set, followed by the
third value VALUE3, as the output phrase AP, on the
20   basis of the current appliance number ID and the
current value VALUE3 of the data word DW.

Once the spoken phrase has been defined, this is
processed such that it can be transmitted and output by
25   a device for speech synthesis.

If, for example, the user is checking the status of the
roller shutters, then the formulation "roller shutter
entirely raised" is output to the user if a transmitted
30   data word DW contains the first value VALUE1 "0", the
formulation "roller shutter entirely lowered" is output
to the user for a transmitted data word DW whose second
value is VALUE2 "255", and for every value ([1; 254])
which differs from this, for example a third value
35   VALUE3 "23", the formulation "the current position of
the roller shutter corresponds to the value: 23" is
output to the user.

After each output, the method is finally continued from the startpoint 1.

If the check finds that the user is not checking any appliance status of any appliance which is located in the local area network and is connected to the telecommunications terminal, then the method is
5   likewise continued at the startpoint 1.

The exemplary embodiments which have been mentioned represent only some of the embodiments which are possible by virtue of the invention. For example,
10   anyone skilled in the art in this field will be able to create a large number of further embodiments by means of advantageous modifications, without the character (essence) of the invention being changed in the process. These embodiments are likewise intended to be
15   covered by the invention.

Patent Claims

1. A method for conversion of a voice output of status messages from at least one appliance which is
5   contained in a local area network and is connected to the telecommunications terminal, having the following features:

(a)   A unique appliance identification is allocated to the appliance which is contained in the local area
10   network and is connected to the telecommunications terminal,

(b)   a first spoken phrase (SP1) which can be predetermined, a second spoken phrase (SP2) which can be predetermined and a third spoken phrase
15   (SP3) which can be predetermined are stored for the appliance which is contained in the local area network and is connected to the telecommunications terminal,

(c)   a status of the appliance which is contained in
20   the local area network and is connected to the telecommunications terminal is transmitted to the telecommunications terminal as a data word (DW)

(d)   the spoken phrases (SP1, SP2, SP3) are allocated as an output phrase (AP) to the statuses of the
25   appliance which is contained in the local area network and is connected to the telecommunications terminal, such that the first spoken phrase (SP1) is selected as the output phrase (AP) for a first status which is identified by a first value
30   (VALUE1) of the data word (DW), the second spoken phrase (SP2) is allocated as the output phrase (AP) to a second status which is identified by a second value of the data word (VALUE2), and the third spoken phrase (SP3) as well as that value
35   (VALUE3) of the data word (DW), which is being converted for voice output

AMENDED SHEET

status, which is identified by a value (VALUE3) of
the data word (DW)

and differs from the first and second values
(VALUE1, VALUE2) is allocated as the output phrase
[lacuna] to at least one third status, which is
identified by a value (VALUE3) of the data word
(DW) which differs from the first and second
values (VALUE1, VALUE2), when the data word (DW)
is transmitted,

(e) the output phrase (AP) is formed such that it can
be transmitted to the device for speech synthesis.

Abstract

Method for conversion of a voice appliance output of statuses

For a voice output of appliance statuses, three spoken phrases are stored for each appliance to be controlled, with the first spoken phrase being allocated to a first appliance status, the second spoken phrase being allocated to a second appliance status, and the third spoken phrase being allocated for at least one third status. When an appliance status is checked, the relevant appliance sends a data word. If the value (which identifies the current appliance status) of the data word corresponds to a first value, the first spoken phrase is output, if it corresponds to a second, the second spoken phrase is output, and the third spoken phrase and the third value are output for at least one third value.
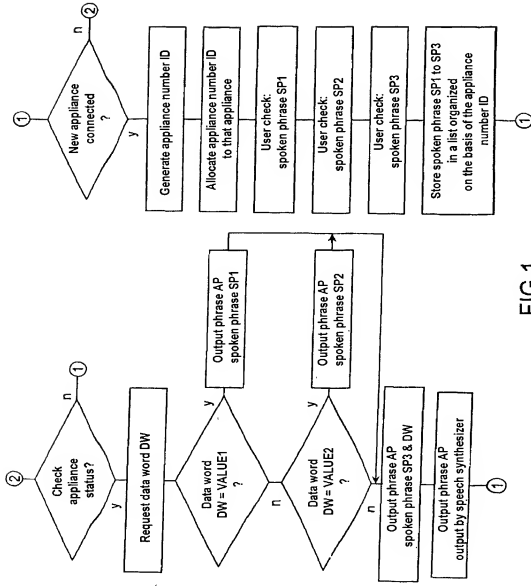
FIGURE

FIG 1

Top flowchart (right side):

① → New appliance connected ? — n → ②
(y) ↓

Generate appliance number ID

Allocate appliance number ID to that appliance

User check: spoken phrase SP1

User check: spoken phrase SP2

User check: spoken phrase SP3

Store spoken phrase SP1 to SP3 in a list organized on the basis of the appliance number ID

→ ①

Bottom flowchart (left side):

② → Check appliance status? — n → ①
(y) ↓

Request data word DW

Data word DW = VALUE1 ?
— y → Output phrase AP spoken phrase SP1

(n) ↓

Data word DW = VALUE2 ?
— y → Output phrase AP spoken phrase SP2

(n) ↓

Output phrase AP spoken phrase SP3 & DW

Output phrase AP output by speech synthesizer

→ ①

Declaration and Power of Attorney For Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt.	As a below named inventor, I hereby declare that
dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,	My residence, post office address and citizenship are as stated below next to my name,
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Verfahren zur Umsetzung einer sprachgebundenen Ausgabe von Zustandsmeldungen

Method for converting status messages output in spoken form

deren Beschreibung	the specification of which
(zutreffendes ankreuzen) ☐ hier beigefügt ist. ☒ am 21.09.2000 als PCT internationale Anmeldung PCT Anmeldungsnummer PCT/DE00/03297 eingereicht wurde und am ____ abgeändert wurde (falls tatsächlich abgeändert).	(check one) ☐ is attached hereto. ☒ was filed on 21.09.2000 as PCT international application PCT Application No. PCT/DE00/03297 and was amended on ____ (if applicable)
Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.	I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.
Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.	I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).
Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.	I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

IDNR: 2590 / V: 99-1.00 / B.Val

Page 1

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Prior foreign appplications
Priorität beansprucht

Priority Claimed

19947100.2	DE	30.09.1999	☒ Yes Ja	☐ No Nein
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)		

			☐ Yes Ja	☐ No Nein
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)		

			☐ Yes Ja	☐ No Nein
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)		

Ich beanspruche hiermit gemäss Absatz 35 der Zivil-prozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmel-dungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35. United States Code. §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1 56(a) which occured between the filing date of the prior application and the national or PCT international filing date of this application.

PCT/DE00/03297	21.09.2000	anhängig	pending
(Application Serial No.) (Anmeldeseriennummer)	(Filing Date D, M, Y) (Anmeldedatum T, M, J)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)

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(Supply similar information and signature for third and subsequent joint inventors).

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